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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,193	03/05/2002	Howard Hao Chen	YOR91999-0420-US2	6354

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EXAMINER	
TRAN, TAN N	

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/091,193	CHEN ET AL.
	Examiner	Art Unit
	TAN N TRAN	2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *response filed on 09/18/03* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *15-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

1. If applicant is aware of any relevant prior art, he/she requested to cite it on form PTO-1449 in accordance with the guidelines set forth in M.P.E.P. **609.**

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3,4-6,8-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiang et al. (5,739,579).

With regard to claim 1, Chiang et al. discloses a substrate 20; two adjacent conductors 61, disposed in at least one dielectric layer 50 formed over the substrate 20 and electrically isolated from each other, wherein each pair of adjacent conductors 61 is separated by a gap, and a first material 50 made of silicon dioxide and formed in the gap between two adjacent conductors 61. (Note fig. 9 of Chiang et al.). It is inherent that silicon dioxide is a high dielectric constant material in order to increase the capacitance between the conductors. Note lines 9,10, paragraph 0007, page 1 of Liou et al. (2002/0008301) are cited to support for the inherent position.

With regard to claims 2,8, Chiang et al. discloses at least one successive conductor level comprising at least one conductor 94 is provided over the adjacent conductors 61, further comprising second material 91 made of silicon dioxide functions as a second high dielectric constant material and disposed between one of the adjacent conductors 61 and the at least one successive conductor level having conductor 94. (Note fig. 9 of Chiang et al.).

With regard to claim 4, Chiang et al. discloses the conductors are fabricated from at least one of group consisting of Au, Cu. (Note lines 52-54, column 6 of Chiang et al.).

With regard to claims 5,6, Chiang et al. discloses a TiN diffusion barrier 60 formed between the high dielectric constant material 50 and the conductors 61. (Note fig. 9 of Chiang et al.).

With regard to claim 9, Chiang et al. discloses the at least one successive conductor level comprises a first successive level comprising at least one conductive via 94 electrically coupled to conductor 61. (Note fig. 9 of Chiang et al.).

With regard to claim 10, Chiang et al. discloses the at least one successive conductor level additionally comprises a second successive level comprising additional adjacent conductors 97 disposed above the first successive level. (Note fig. 9 of Chiang et al.).

With regard to claim 11, Chiang et al. discloses the second conductor level additionally comprises third material made of silicon dioxide functions as a high dielectric constant material disposed between the additional adjacent conductors 97. (Note fig. 9 of Chiang et al.).

With regard to claim 12, Chiang et al. discloses at least one electrically conductive barrier material 93 disposed between the second high dielectric constant material 91 and the at least one conductor 61. (Note fig. 9 of Chiang et al.).

With regard to claim 13, Chiang et al. discloses at least one electrically conductive barrier material 96 disposed between the third high dielectric constant 95 and the additional adjacent conductors 97. (Note fig. 9 of Chiang et al.).

Claims 1,3 are rejected under 35 U.S.C. 102(b) as being anticipated by Summerfelt (5,909,043).

With regard to claims 1,3, Summerfelt discloses a substrate 40; two adjacent conductors 42, disposed in at least one dielectric layer 54 formed over the substrate 40 and electrically isolated from each other, wherein each pair of adjacent conductors 42 is separated by a gap, and a first material 46 made of barium strontium titanate having high dielectric constant and formed in the gap between two adjacent conductors 42. (Note lines 40-42, column 1, fig. 13 of Summerfelt).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 7,14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang et al. (5,739,579).

With regard to claim 7, Chiang et al. does not disclose at least one pair of adjacent conductors comprises a power supply lines and a ground lines. However, it would have been obvious to one of ordinary skill in the art to form at least one pair of adjacent conductors comprises a power supply lines and a ground lines in order to activate the device. Note lines 24-37, column 4 of Lee (5,903,493) are cited to support for the well know position.

With regard to claim 14, Chiang et al. discloses all the claimed subject matter except for the gap is in the range 0.1 to 2.0 microns. However, it would have been obvious to one of ordinary skill in the art to form the gap is in the range 0.1 to 2.0 microns in order to minimize the size of the device.

Conclusion

4. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tan Tran whose telephone number is (703) 305-3362. The examiner can normally be reached on M-F 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

TT

Oct 2003

Minhtoan Tran
Primary Examiner
Art Unit 2826